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08/728463

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/728,463	10/10/96	LONBERG	N 14643-009020

HM11/1208
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EXAMINER

GAMBEI, P	
ART UNIT	PAPER NUMBER

1644

14

DATE MAILED: 12/08/98

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 9/15/98

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-30 is/are pending in the application.
Of the above, claim(s) 1-9, 15-17 is/are withdrawn from consideration.
☐ Claim(s) is/are allowed.
☒ Claim(s) 10-14, 18-30 is/are rejected.
☐ Claim(s) is/are objected to.
☐ Claim(s) are subject to restriction or election requirement.

Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
☐ The drawing(s) filed on is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on is ☐ approved ☐ disapproved.
☐ The specification is objected to by the Examiner.
☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.
☐ received in Application No. (Series Code/Serial Number)
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received:

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
☐ Information Disclosure Statement(s), PTO-1449, Paper No(s).
☐ Interview Summary, PTO-413
☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152

-SEE OFFICE ACTION ON THE FOLLOWING PAGES-

BEST AVAILABLE COPY

DETAILED ACTION

1. Applicant's election of the species recited in claim 22 (M), filed 9/15/98 (Paper No. 13), is acknowledged.

It appears that the species comprising A-T comprising particular amino acids wherein the immunoglobulin is CD4-specific are free of the art. However there are issues under 112, first and second paragraphs and antecedent basis in the specification to address, as indicated herein.

Claims 1-9 and 15-17 are withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b) as being drawn to a nonelected invention. Election was made without traverse in Paper No. 10.

2. All of the priority applications USSNs were not available to the examiner at this time.

Due to the number of CIPs in the priority applications, applicant is invited to indicate the written support and enablement under 35 USC 112, first paragraph, for the instant claims, including the non-elected species in the interest of compact prosecution.

3. Applicant is reminded that affidavits and declarations, such as those under 37 C.F.R. § 1.131 and 37 C.F.R. § 1.132, filed during prosecution of the parent application do not automatically become a part of this application. Where it is desired to rely on an earlier filed affidavit, the applicant should make the remarks of record in the later application and include a copy of the original affidavit filed in the parent application.

4. Applicant's provision of pages 208 and 209 as substitute pages, filed 9/12/97 (Paper No. 7), is acknowledged.

However, Tables 1, 2, 4 and 7 on pages 132, 138, 146, 149, respectively of the original specification are extremely difficult, if not impossible, to read for all of their respective contents. Applicant is invited to provide substitute pages for these as well. The substitute pages filed must be accompanied by a statement that it contains no new matter. Such statement must be a verified statement if made by a person not registered to practice before the Office.

5. If necessary, applicant should amend the first line of the specification to update the status of priority documents.

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. Applicant should restrict the title to the claimed invention.

7. The Abstract of the Disclosure is objected to because it does not adequately describe the claimed invention. Correction is required. See MPEP 608.01(b).

8. Formal drawings and photographs have been submitted which fail to comply with 37 CFR 1.84. Please see the enclosed form PTO-948.

9. The application is required to be reviewed and all spelling, TRADEMARKS, and like errors corrected.

Applicant is required to identify the nucleotide and amino acid sequences in the specification with SEQ. ID NOS. For example, see page 38.

Trademarks should be capitalized or accompanied by the [™] or [®] symbol wherever they appear and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the trademarks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate corrections are required.

10. The following is a quotation of the first paragraph of 35 U.S.C. § 112:
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Applicant is requested to provide written support for the recitation of claim 22 in the specification. This particular construct was not readily apparent upon a review of the lengthy specification.

As requested above, applicant is invited to indicate the written support and enablement of this recitation in the priority documents, that is, when did this limitation first come into priority applications or is the priority of claim 22 the instant application.

12. Claims 13-14 and 22-30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

It is not clear from the disclosure as filed that the particular immunoglobulins comprising the claimed elements set forth in claims 13-14 and 22-30 would have the property of binding CD4. Applicant is invited to provide objective evidence that immunoglobulins comprising these particular elements do bind and are enabled for binding CD4. It is noted that certain sequences such as SEQ ID NO: and SEQ ID NO:3 have been found in antibodies of specificities other than CD4. In the absence of objective evidence, there appears to be insufficient enablement for the scope of immunoglobulins that can bind CD4, that incorporate the particular amino acids or constructs as set forth in claims 13-14.

13. Claim 10-14 and 22-30 are rejected under 35 U.S.C. § 112, first and second paragraphs, as the claimed invention is not described in such full, clear, concise and exact terms as to enable any person skilled in the art to make and use the same, and/or for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The instant claims are indefinite in the recitation of "substantially the same sequence" or substantially identical to an amino acid sequence" because the characteristics as well as the metes and bounds are unclear and ambiguous. It is unclear given the absence of sufficient guidance or metes and bounds as to what amount of DNA variation would be encompassed by the claimed recitation. Further, it is noted that a percentage of sequence identity is meaningless in the absence of mathematical algorithm employed to calculate such number. Depending on the gap weight, gap length, lengths of two sequences to be compared, etc., a percentage of sequence identity can vary dramatically.

With respect to enablement, Minor structural differences among structurally related compounds or compositions can result in substantially different biological activities. In the absence of sufficient information as to the structure-function relationship of the appropriate algorithm as to apply to CD4-specific immunoglobulins, it would require undue experimentation to practice the invention in a manner commensurate in scope with the claims, that is, to predict which of the innumerable species encompassed by the claimed invention. It would not constitute undue experimentation to test immunoglobulins encoded by amino acid or nucleic acid sequences which possess the functional characteristics of CD4-specific antibodies.

14. Claims 10-12 and 22-30 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The instant claims are indefinite in that the metes and bounds of "artificial gene" and the various "segments" (e.g. "DXP'1", "VH-", "JH-", etc.) recited in the claims are ambiguous and not clearly defined. Both the structural and functional elements of these "segments" and "genes" are clearly defined. Applicant is invited to clearly delineate the metes and bounds of these "segments" and "genes".

The applicant is reminded that the amendment must point to a basis in the specification so as not to add any new matter

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 10-12 and 18-22 are rejected under 35 U.S.C. § 103 as being unpatentable over Cobbold et al. (U.S. Patent No. 5,690,933) and Queen et al. (U.S. Patent No. 5,530,101). The instant claims are drawn to humanized or human CD4-specific antibodies and cells that express said antibodies.

Cobbold et al. teach the generating antibodies to CD4 from different species including humans, antibodies that are derived from different species such as humans (see columns 2-3, overlapping paragraph for example). This reference differs from the claims by not exemplifying such human or humanized CD4-specific antibodies or cells that comprise said antibodies.

Queen et al. teach the generation of recombinant human or humanized antibodies (see entire document). This reference differs from the instant claims by not exemplifying the particular human CD4 specificity for such antibodies.

It would have been prima obvious to one of ordinary skill in the art at the time the invention was made to generate either humanized or human antibodies to CD4 for various purposes, including therapeutic and diagnostic purposes. In addition, it would have been expected at the time the invention was made that certain antibodies that bound human CD4 would also bind other primate CD4, given the high sequence homology/identity among the primates at the time the invention was made.

While it is recognized that claims 10-12 recite the source of a transgenic mouse, the recitation of a process limitation is not seen as further limiting the claimed product, as it is presumed that equivalent products can be obtained by multiple routes. The prior art provided expectation of success in deriving eukaryotic cells, including murine cells, to comprise recombinant or humanized immunoglobulins at the time the invention was made, as evidenced by Queen et al.

One of ordinary skill in the art at the time the invention was made would have been motivated to select CD4-specific human and humanized antibodies as diagnostic and therapeutic agents at the time the invention was made. From the teachings of the references, it was apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

17. No claim is allowed.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Gambel whose telephone number is (703) 308-3997. The examiner can normally be reached Monday through Thursday from 7:30 am to 6:00 pm. A message may be left on the examiner's voice mail service. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

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Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 305-3014.

Phillip Gambel, PhD.
Patent Examiner
Group 1640
Technology Center 1600
December 7, 1998

A handwritten signature in black ink, appearing to read "P. Gambel", is written below the typed name.